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of the Malayan region, and other related ferns. *Cheiropleuria* exhibits an unusual mixture of primitive and advanced characters, being thus a remarkably synthetic form. Its characters connect it on the one hand ("downward") with *Dipteris*, and on the other hand with *Platycerium*. The relatively primitive characters are the hairy investment, protostelic cylinder, undivided leaf trace, and frequently bifurcate leaf. The relatively advanced characters are reticulate venation and a "mixed" sorus. BOWER claims that "the mixed characters which this fern shows are one of the clearest examples of non-parallelism of progression in the several criteria used for comparison among ferns." An interesting situation is that probably *Platycerium* is a derivative from the *Dipteris* stock, "specialized for epiphytic habit." Other interesting connections are pointed out, and the details of the investigation are full of suggestion.—J. M. C.

Endoconidia.—BRIERLEY¹⁰ has investigated the "endoconidia" of *Thielavia basicola*, a well known parasitic fungus referred to the Perisporiaceae. These interesting cells are described by ZOPF as formed in acropetal succession, and as emerging successively through the differentiation of their lateral walls into two layers, the outer forming a sheath which is left behind. BRIERLEY finds that these conidia are not endospores formed by free cell division within an "endoconidial" cell, but are abstricted "acrogenously" from the conidiophore. The first conidium is liberated by the differentiation of its walls into an inner wall and a sheath, and by rupture of the latter at its apex. The later conidia grow out through the sheath of the first, and are freed by the splitting of their basal walls. The author thinks that this kind of conidial development is probably that of all "endoconidia."—J. M. C.

Hybridization and water requirement.—In breeding plants for drought resistance it is desirable to know whether there is a definite relationship between efficiency in the use of water in the hybrid and in the parents. This question has been investigated by BRIGGS and SHANTZ,¹¹ using corn and wheat hybrids and their parent strains, with the result that the hybrids were found to range in water requirement from 10 per cent below to the same amount above the parental mean, while the chances are even that a corn hybrid will not, in its water requirement, depart more than 6 per cent from the parental mean.—GEO. D. FULLER.

Parasitic fungi of Wisconsin.—DAVIS,¹² in continuation of his studies of the parasitic fungi of Wisconsin, has issued three papers supplementary to his

¹⁰ BRIERLEY, WILLIAM B., The "endoconidia" of *Thielavia basicola* Zopf. Ann. Botany 29:483-493. pl. 23. 1915.

¹¹ BRIGGS, L. J., and SHANTZ, H. L., Influence of hybridization and cross-pollination on the water requirement of plants. Jour. Agric. Research 4:391-402. 1915.

¹² DAVIS, J. J., Notes on parasitic fungi in Wisconsin. Trans. Wisc. Acad. Sci. 18:78-92, 93-109, 251-271. 1915.

"List of parasitic fungi of Wisconsin," published in 1912. In these lists many species are presented, either unreported before, more critically studied, or on additional hosts, and 23 new species are described in the following genera: *Ascochyta* (2), *Cercospora* (6), *Cercosporella* (4), *Colletotrichum* (2), *Cylindrosporium*, *Diplodia*, *Fusarium*, *Phyllosticta*, *Ramularia* (2), *Septoria* (3).—J. M. C.

Secretory tissues of Marattiaceae.—WEST¹³ has investigated the two kinds of secretory tissues that characterize the Marattiaceae, namely the mucilage canals and the cells or ducts containing tannin. He discovered lysigenous mucilage canals in every genus and species examined. The tannin cells are widely distributed through the tissues, occurring either as isolated sacs or grouped together in series.—J. M. C.

Seeds of Ginkgo.—Miss AFFOURTIT and Miss LA RIVIÈRE¹⁴ have discovered considerable variation in the ribbing in the seeds of *Ginkgo*. They have been described in general as having two ribs and occasionally three. A large number of seeds from a single tree growing in a garden near Rotterdam showed 2, 3, or 4 ribs, and also many gradual transitions.—J. M. C.

Flora of New Guinea.—A new fascicle of the Dutch exploration of the flora of New Guinea has appeared.¹⁵ Previous parts have been reviewed in this journal.¹⁶ The fascicle consists of the beginning of a critical presentation of the orchid flora by J. J. SMITH. The present fascicle contains 152 species in 45 genera.—J. M. C.

A fossil moss.—LIGNIER¹⁷ has reported the discovery of a fossil moss from the silex of Grand 'Croix, referred to the Stephanian, in which the structure has been preserved with remarkable distinctness. The specimen is regarded as representing a new species, which is named *Musciles Bertrandi*.—J. M. C.

Zygnemales.—TRANSEAU¹⁸ has made a study of Zygnemales, chiefly North American. The 36 species presented are distributed among the 3 genera as follows: *Debarya*, 3 species, 2 of which are new; *Zygnema*, 7 species, 1 of which is new; *Spirogyra*, 26 species, 8 of which are new.—J. M. C.

¹³ WEST, CYRIL, On the structure and development of the secretory tissues of the Marattiaceae. Ann. Botany 29:409-422. pl. 18. figs. 14. 1915.

¹⁴ AFFOURTIT, Miss M. F. A., and LA RIVIÈRE, Miss H. C. C., On the ribbing of the seeds of *Ginkgo*. Ann. Botany 29:591-595. fig. 1. 1915.

¹⁵ Nova Guinea. Résultats de l'expédition scientifique Néerlandaise à la Nouvelle-Guinée en 1912 et 1913 sous les auspices de A. FRANSSEN HERDERSCHEE. Vol. XII. Botanique. Livraison III. 4to. pp. 173-272. pls. 55-99. Leide: E. J. Brill. 1915.

¹⁶ BOT. GAZ. 49:464. 1910; 55:462. 1913; 57:342. 1914; 59:335. 1915.

¹⁷ LIGNIER, O., Sur une mousse houillère à structure conservée. Bull. Soc. Linn. Normandie VI. 7:128-131. fig. 1. 1914.

¹⁸ TRANSEAU, E. N., Notes on the Zygnemales. Ohio Jour. Sci. 16:17-31. 1915.